

## CLAIMS:

1. A process for the manufacture of furfural characterised in that the steps of charging a reactor with pentosan containing material, heating the charge by introduction of pressurised steam to a first predetermined temperature closing the inlet valve of the reactor, and subjecting the charge to a gradual reduction of pressure until a second predetermined temperature is attained, the depressurisation being at a rate sufficient to maintain the liquid phase within the reactor in a constantly ebullient state.
2. A process according to claim 1 characterised in that the charge is acidified prior to heating.
3. A process according to claim 1 characterised in that the rate of depressurisation is sufficient to complete conversion to furfural before the second predetermined temperature is reached.
4. A process according to claim 1 characterised in that the complete conversion to furfural is obtained in more than one depressurisation from the first predetermined temperature to the second predetermined temperature by the addition of steam.
5. A process according to claim 1 characterised in that steam is added during the depressurisation, for a predetermined period.
6. A process according to claim 1 characterised in that the gradual depressurisation comprises the controlled leaking of a stream of vapour from the reaction until the second predetermined temperature is attained.

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7. A process according to claim 1 characterised in that the gradual depressurisation takes place in the temperature range between 280° Celsius and 150° Celsius.

8. A process according to claim 7 characterised in that the temperature range of operation is between 230° Celsius and 170° Celsius.

5 9. A process according to claim 1 characterised in that phosphoric acid is used as the catalyst.

10. A process according to claim 1 characterised in that acetic acid is used as the added catalyst.

10 11. An apparatus for the manufacture of furfural according to the process of claim 1 characterised in that it comprises a pressure reactor including an inlet for steam under pressure comprising one or more valves, and an outlet comprising a flow control valve or the combination of a shut-off valve and an orifice of predetermined dimensions.

12. An apparatus according to claim 11 characterised in that the reactor is thermally well insulated.

15 13. An apparatus according to claim 12 characterised in that the wall of the reactor is adapted to be heated and/or heat exchange surfaces are incorporated inside the reactor.

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